



S/076/60/034/007/031/042/xx  
B004/B068

Legend to Fig. 5:  $a \rightarrow \leftarrow b$   
calculated stable equilibrium;  
 $c \rightarrow \leftarrow d$  calculated unstable  
equilibrium.

Fig. 5

Card 4/4

S/020/60/133/006/013/016  
BC04/B064

AUTHORS: Nekrasov, D. N. and Kusakov, M. M.

TITLE: The Capillary Rising of Liquids in Porous Media, and  
Capillary Hysteresis

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 6,  
pp. 1379-1380

TEXT: Employing a method explained in a previous paper (1), on the basis of experimental data, and on the assumption of an equivalent vertical capillary with varying diameter, the authors prove that a non-viscous liquid may rise in capillary media to an infinite number of levels, between a minimum and a maximum (capillary hysteresis). For the equivalent capillary the system of equations (1) is written down:  $h^2 g = 2\sigma/r$ ;  $r = f(h)$ , where  $h$  denotes the height of liquid in the capillary;  $\rho$  its density;  $g$  the gravitational acceleration;  $\sigma$  the surface tension of the liquid,  $r$  the radius of the capillary. This system has an infinite number of roots  $(h_1)_{\min} < h_2 < \dots < (h_n)_{\max}$ . The potential energy  $U$  is

Card 1/2

The Capillary Rising of Liquids in Porous Media, and Capillary Hysteresis

S/020/60/133/006/013/016  
B004/B064

expressed by equation (2):  $U = -\gamma \epsilon \int_0^V (p_k - h) dV$  ( $p_k$  = capillary pressure,

$V$  = volume of the liquid in the capillary). Function  $U = f(\bar{h})$  is graphically obtained from the experimentally found function  $y = f(p_k - h)$ ; ( $\bar{h}$  = mean height), and from the condition  $dU/d\bar{h} = 0$ , the

different levels of the liquid rise that are in equilibrium, are found. Fig. 1 shows the experimentally determined function  $U = f(\bar{h})$  for quartz sand, grain size 0.35 - 0.42 mm. Curve 1 corresponds to the rise in the capillary, curves 2-6 are calculated for  $h > (\bar{h}_1)_{\min}$ . Each curve has a

minimum whose locus lies on curve 7, that goes over into a straight line at  $h = (\bar{h}_n)_{\max}$ . There are 1 figure and 1 Soviet reference.

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR  
Institute of Petroleum-chemical Synthesis of the Academy of Sciences USSR)

PRESENTED: April 11, 1960, by A. V. Topchiyev, Academician

SUBMITTED: April 11, 1960

Card 2/2

KUSAKOV, M.M.)

PHASE I BOOK EXPLOITATION

SOV/5590

Konferentsiya po poverkhnostnym silam. Moscow, 1960.

Issledovaniya v oblasti poverkhnostnykh sil; sbornik dokladov na konferentsii po poverkhnostnym silam, aprel' 1960 g. (Studies in the Field of Surface Forces; Collection of Reports of the Conference on Surface Forces, Held in April 1960) Moscow, Izd-vo AN SSSR, 1961. 231 p. Errata printed on the inside of back cover. 2500 copies printed.

Sponsoring Agency: Institut fizicheskoy khimii Akademii nauk SSSR.

Resp. Ed.: B. V. Deryagin, Corresponding Member, Academy of Sciences USSR; Editorial Board: N. N. Zakhavayeva, N. A. Krotova, M. M. Kusakov, S. V. Nerpin, P. S. Prokhorov, M. V. Talayev and G. I. Fuks; Ed. of Publishing House: A. L. Bankvitser; Tech. Ed.: Yu. V. Rylina.

PURPOSE: This book is intended for physical chemists.

Card 1/8

Studies in the Field of Surface Forces (Cont.)

SOV/5590

COVERAGE: This is a collection of 25 articles in physical chemistry on problems of surface phenomena investigated at or in association with the Laboratory of Surface Phenomena of the Institute of Physical Chemistry of the Academy of Sciences USSR. The first article provides a detailed chronological account of the Laboratory's work from the day of its establishment in 1935 to the present time. The remaining articles discuss general surface force problems, polymer adhesion, surface forces in thin liquid layers, surface phenomena in dispersed systems, and surface forces in aerosols. Names of scientists who have been or are now associated with the Laboratory of Surface Phenomena are listed with references to their past and present associations. Each article is accompanied by references.

TABLE OF CONTENTS:

Zakhavayeva, N. N. Twenty-Five Years of the Laboratory of Surface Phenomena of the IFKhAN SSSR (Institute of Physical Chemistry of the Academy of Sciences USSR) 3

Card 2/8

## Studies in the Field of Surface Forces (Cont.)

SOV/5590

## I. GENERAL PROBLEMS OF SURFACE FORCES

Deryagin, B. V. Surface Forces and Their Effect on the Properties of Heterogenous Systems	11
Kusakov, M. M., and L. I. Mekenitskaya. Investigation of the State of Bound Water in Oil Traps	17
Shcherbakov, L. M. General Theory of Capillary Effects of the Second Order	28
Dukhin, S. S. Surface Forces of a Diffusive Nature Close to Liquid Interfaces	38

## II. POLYMER ADHESION

Korotova, N. A., and L. P. Morozova. Investigation of the Adhesive Binding of Polymers by Means of the Luminescence Method	48
--	----

Card 3/8

## Studies in the Field of Surface Forces (Cont.) SOV/5590

Voyutskiy, S. S., V. L. Vikula, V. Ye. Gul', and Ho Yün-tsui. Effect of Molecular Weight, Polydispersion, and Polarity of High Polymers on Their Adhesion to High Molecular Substrata	55
Metsik, M. S. Role of Surface Forces in Mica Crystals	66
Smilga, V. P. Double Layer on the Boundary of Solids Characterized by a Donor-Acceptor Bond	76
Krotova, N. A., and L. P. Morozova. Applying Infrared Spectroscopic Methods to Study the Interaction Between an Adhesive and Its Lining (Polymer - Glass)	83
Deryagin, B. V., and I. N. Aleynikova. Measurement of the True Density of a Double Electric Layer at the Metal - Dielectric Boundary of Separation	89

Card 4/8

Studies in the Field of Surface Forces (Cont.) SOV/5590

III. SURFACE FORCES IN THIN LAYERS OF LIQUIDS

Akhmatov, A. S. Fundamental Law of Boundary Friction and Its Physical Basis	93
Fuks, G. I. Properties of Organic Acid Solutions in Hydro-carbon Liquids at the Surface of Solids	99
Tolstoy, D. M. Some Considerations on the Regularities of Friction of the First Order	113
Tolstoy, D. M., R. L. Kaplan, Lin Fu-sheng, P'an Pin-yao. New Experimental Data on External Friction	126
Deryagin, B. V., N. N. Zakhavayeva, S. V. Andreyev, A. A. Milovidov, A. M. Khomutov. Study of the Flow of Thin Layers of Polymer Solutions By the Cinematographic Method	139
Voropayeva, T. N., B. V. Deryagin, B. N. Kabanov. Effect of the Concentration of an Electrolite on the Magnitude of the	

Card 5/8

Studies in the Field of Surface Forces (Cont.) SOV/5590

Adhesion Process in Platinum Threads 143

IV. SURFACE PHENOMENA IN DISPERSION SYSTEMS

Volarovich, M. P., and N. V. Churayev. Investigation of Processes of Moisture Movement in Peat By the Radioactive-Isotope Method 149

Neroin, S. V., and B. V. Deryagin. Surface Phenomena in Soil Mechanics 156

Glazman, Yu. M. Theory of the Coagulation of Lyophobic Sols By Means of Electrolyte Mixtures 166

Deryagin, B. V., N. N. Zakhavayeva, and A. M. Lopatina. Investigating the Filtration of Electrolyte Solutions in High-Dispersion Powders 175

Kudryavtseva, N. M., and B. V. Deryagin. Investigating the Slow Coagulation of Hydrosols With a Flow Ultramicroscope 183

Card 6/8

Studies in the Field of Surface Forces (Cont.) SOV/5590

Talayev, M. V., B. V. Deryagin, and N. N. Zakhavayeva.  
Experimental Study of the Filtration of Rarefied Air  
Through Porous Bodies in a Transitional Area of  
Pressures

187

Deryagin, B. V., N. N. Zakhavayeva, M. V. Talayev, B. N.  
Parfanovich, and Ye. V. Makarova. Metallic Device for  
Determining the Specific Surface of Powdered and Porous  
Bodies

190

#### V. SURFACE FORCES IN AEROSOLS

Deryagin, B. V., S. P. Bakanov, S. S. Dukhin, and G. A.  
Batova. Diffusiophoresis of Aerosol Particles

197

Bakanov, S. P., and B. V. Deryagin. Behavior of a Small  
Aerosol Particle in a Nonuniformly Heated Mixture of Gases

202

Strozhilova, A. I. Differential Counter of Condensation  
Nuclei

209

Card 7/8

Studies in the Field of Surface Forces (Cont.) SOV/5590

Deryagin, B. V., P. S. Prokhorov, M. V. Velichko, L. F.  
Leonov. New Method For Obtaining Constant and Homogenous  
Supersaturations 216

Martynov, G. A., S. P. Bakanov. On the Solution of a  
Kinetic Equation of Coagulation 220

AVAILABLE: Library of Congress

Card 8/8

JA/rsm/os  
10/28/61

S/081/62/000/005/077/112  
B162/B101

AUTHORS: Kusakov, M. M., Sanin, P. I., Razumovskaya, E. A.,  
UT'yanova, A. V., Dekartov, A. P.

TITLE: Investigation of the mechanism of interaction of tributyl  
trithiophosphite in a hydrocarbon medium with thin layers of  
copper by the radioactive indicator method

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 5, 1962, 527,  
abstract 5N209 (Sb. "Prisadki k maslам i топливам".  
M., Gostoptekhizdat, 1961, 207-213)

TEXT: An investigation is made of the kinetics of the interaction of  
tributyl trithiophosphite (I) solutions labeled with S<sup>35</sup>, P<sup>32</sup>, or C<sup>14</sup>, in  
the naphtheneparaffin fraction of MS-20 (MS-20) oil at temperatures from  
70 to 130°C with thin layers of copper (from 70 to 1000 Å), obtained by  
the method of evaporation copper in vacuum and deposited on a degreased

Card 1/2

S/081/62/000/005/077/112  
B162/B101

Investigation of the mechanism ...

glass; concentration of I in oil is 0.1 moles/liter. It is shown that in the interaction of the solution I with copper films are formed which contain S, P, and C. It is assumed that I, on reacting with copper at an increased temperature, decomposes according to the equation  $8I \rightarrow 2PH_3 + 9C_4H_9SH + 15C_4H_8 + 3P_2S_5$ . The separated  $C_4H_9SH$  with copper forms  $(C_4H_9S)_2Cu$  which, at an increased temperature, decomposes into  $CuS + 2C_4H_8 + H_2S$ , and  $PH_3$  with copper forms phosphide. It is concluded that the films which are formed in the interaction of I with copper contain sulfide, phosphide, and mercaptide of copper, and the product of reaction of the hydrocarbon radical I with copper. [Abstracter's note: Complete translation.]

Card 2/2

TERENT'YEVA, Ye.M.; SANIN, P.I.; STEPANTSEVA, T.G.; KUSAKOV, M.M.;  
SHIMANKO, N.A.; SIDORENKO, V.I.

Synthesis and investigation of the ultraviolet absorption spectra  
of hydrocarbons of the 1,1-diphenylethane series. Neftekhimiia  
1 no.2:141-148 Mr-Ap '61. (MIRA 15:2)

1. Institut neftekhimicheskogo sinteza AN SSSR.  
(Hydrocarbons-Spectra)

KUSAKOV, M.M.

Fourteenth conference on spectroscopy. Neftekhimiia 1 no.5,718-  
821 S-0 '61. (MIRA 15:2)  
(Spectrum analysis—Congresses)

KUSAKOV, M.M.

"Physiochemical properties of individual hydrocarbons," a  
manual. Reviewed by M.M. Kusakov. Khim.i tekhnopl.i masel  
6 no.8:68-70 Ag '61. (MIRA 14:8)  
(Hydrocarbons)

FRISH, S.E., otv. red.; BOBOVICH, Ya.S., kand. fiz.-matem. nauk, red.; VOL'KENSHTEYN, M.V., doktor fiz.-matem. nauk, red.: GALANIN, M.D., doktor fiz.-matem. nauk, red.; DRUKAREV, G.F., doktor fiz.-matem. nauk, red.; YEL'YASHEVICH, M.A., akademik, red.; KALITEYEVSKIY, N.I., doktor fiz.-matem. nauk, red.; KUSAKOV, M.M., doktor khim. nauk, red.; LIPIS, L.V., doktor tekhn.nauk, red.; PEKAR, S.I., doktor fiz.-matem. nauk, red.; PROKOF'YEV, V.K., doktor fiz.-matem. nauk, red.; SOKOLOV, N.D., doktor fiz.-matem. nauk, red.; FEOFILOV, P.P., doktor fiz.-matem. nauk, red.; CHULANOVSKIY, V.M., doktor fiz.-matem. nauk, red.; SHPOL'SKIY, E.V., doktor fiz.-matem. nauk, red.; YAROSLAVSKIY, N.G., kand. fiz.-matem. nauk, red.; LEKSINA, I.Ye., red. izd-va; PENKINA, N.V., red. izd-va; NOVICHKOVA, N.D., tekhn. red.; KASHINA, P.S., tekhn. red.

[Physical problems in spectroscopy] Fizicheskie problemy spektroskopii; materialy. Moskva, Izd-vo Akad. nauk SSSR. Vol.1. 1962.  
(MIRA 16:2)  
474 p.

1. Soveshchaniye po spektroskopii. 13th, Leningrad, 1960. 2. Chlen-korrespondent Akademii nauk SSSR (for Frish). 3. Akademiya nauk Belurusskoy SSR (for Yel'yashevich).  
(Spectrum analysis)

S/048/62/026/010/005/013  
B117/B186

AUTHORS: Kugakov, M. M., Shimanko, N. A., Shishkina, M. V.,  
Zimina, K. I., and Siryuk, A. G.

TITLE: Ultraviolet absorption spectra of aromatics

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya,  
v. 26, no. 10, 1962, 1249-1252

TEXT: This paper deals with the rules governing the effect of saturated substituting groups on the absorption spectra of a number of mono- and bicyclic aromatics. It has been found that, according to the number and position of substitutes, the absorption spectrum of alkyl benzenes is shifted towards the long-wave region, and the absorption intensity maxima are intensified. In the case of cycloalkyl benzenes (naphthene-aromatic hydrocarbons) with a similar spectrum this shift is related to the substitution of cyclopentyl groups for the alkyl groups. The structure of indanes (hydrindenes), which show absorption spectra and which absorb 2-3 times more strongly than benzene, can be determined by comparing their spectra with those of corresponding alkyl-substituted benzenes and simple homologs of indane. The ultraviolet spectra of tetrahydronaphthalenes

Card 1/2

S/048/62/026/010/005/013  
B117/B186

Ultraviolet absorption spectra...

(tetralines) follow the same laws as alkyl benzenes, cycloalkyl benzenes, and indanes. Diphenyls and benzenes have different spectra. Most m- and p-substituted diphenyl homologs are characterized by strong absorption and by the absence of a fine structure in the bands. The spectra of ortho-substituted diphenyl are subject to considerable changes. Diphenyl alkanes and alkyl diphenyl alkanes: The absorption spectra of several diphenyl methanes are similar to those of benzene. The spectra of aromatics with condensed rings show a specific character. Naphthalene has an absorption spectrum covering the range 2100-3300 Å and is characteristic of all naphthalene homologs. As the absorption spectra characteristic of polycyclic aromatics are hardly affected by substituting groups these are suitable for analytical purposes. An atlas (M. M. Kusakov, N. A. Shimanko, M. V. Shishkina, Ul'travioletovyye spektry pogloshcheniya aromaticeskikh uglevodorodov (Ultraviolet absorption spectra of aromatics), Izd. AN SSSR, M., 1962) was compiled for the practical application of ultraviolet spectroscopy. The ultraviolet spectra of mono- and bicyclic aromatics, graphically represented on the same scale and in terms of  $\epsilon = f(\lambda)$  or  $\log \epsilon = f(\lambda)$ , were partly recorded by the present authors and partly taken from publications (American Petroleum Institute Research Project 44, Ultraviolet Spectra Data, 1958).

Card 2/2

S/048/026/010/006/013  
B117/B186

AUTHORS: Shimanko, N. A., Shishkina, M. V., Kusakov, M. M., and  
Sidorenko, V. I.

TITLE: Absorption spectra of diphenyl alkane series of hydrocarbons in  
the near ultraviolet

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya,  
v. 26, no. 10, 1962, 1252-1256.

TEXT: Absorption spectra of isoctane solutions of several polycyclic  
aromatic and naphthalene-aromatic hydrocarbons, C<sub>14</sub> - C<sub>32</sub>, with isolated  
benzene rings, were examined at room temperature using an "Uvispek"  
spectrophotometer, the compounds being synthesized by Ye. M. Terent'yeva  
et al. (Neftekhimiya, 1, no. 2, 141 (1961)), M. G. Rudenko and Al. A.  
Petrov (Zh. prikl. khimii. 34, 613 (1961)). All the spectra except that  
of 1,1-diphenyl ethane were obtained for the first time (Figs. 1-4). It is  
shown that the spectra of hydrocarbons belonging to the 1,1-diphenyl ethane  
series can be well simulated by adding the absorption spectrum of mono-  
substituted benzene to that of the corresponding polysubstituted benzene.

Card 1/2

S/048/62/026/010/006/013  
B117/B186

Absorption spectra of diphenyl ...

The total curves so obtained, representing characteristic spectra of complex molecules, indicate the number and position of each absorption minimum and maximum. This method is proposed for the structural analysis of the components of bicyclic hydrocarbons. There are 4 figures.

Figs. 1-4. Absorption spectra in the near ultraviolet.

Legend to Fig. 1: (1) 1,1-diphenyl ethane; (2) 1,2-diphenyl propane; (a) isopropyl benzene; (3) 1,1-di-(4-isopropyl-phenyl)-hexane; (6') 1-methyl-4-isopropyl benzene.

Legend to Fig. 2: (4) 1,2-di-(paraxylyl)-propane; (a) 1,2,4-trimethylbenzene; (5) 1-phenyl-1-(paratolyl)-ethane; (6) 1-phenyl-1-(paraethyl-phenyl)-ethane; (6') isopropylbenzene + 1-methyl-4-isopropyl benzene.

Legend to Fig. 3: (7) 1-phenyl-1-(2,5-dimethyl-phenyl)-ethane; (8) 1-phenyl-1-(2,4,5-trimethyl-phenyl)-ethane; (9) 1-phenyl-1-(2,4,6-trimethyl-phenyl)-ethane; (a) isopropyl benzene + 1,2,4-trimethyl benzene; (10) 1-(paraxylyl)-2-hexyl-4-phenyl butane.

Card 2/6 Z

S/048/62/026/010/007/013  
B117/B186

AUTHORS:

Kusakov, M. M., Pokrovskaya, Ye. S., Shishkina, M. V.,  
Shimanko, N. A., and Prokof'yeva, Ye. A.

TITLE:

Structural analysis of monocyclic hydrocarbons on the basis  
of absorption spectra

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya,  
v. 26, no. 10, 1962, 1257-1260.

TEXT: Infrared and ultraviolet absorption spectra of newly synthesized  
benzene derivatives with alkyl substituents ( $C_3 - C_{16}$ ) of different  
structures, including derivatives with penta- and hexacyclic rings, were  
examined. In order to follow and establish the course of the synthesis  
more precisely an attempt was made to determine the number and position of  
the substituting groups and to check the known characteristics and position of  
derivatives showing different degrees of substitution. The conditions of  
synthesis and the physicochemical properties of the compounds under  
examination have already been described (G. D. Gal'pern, M. M. Kusakov,  
Ye. S. Pokrovskaya, N. A. Shimanko, Tr. In-ta nefti AN SSSR, 12, 38

Card 1/3

S/048/62/026/010/007/013  
B117/B186

Structural analysis of monocyclic ...  
(1958); Ye. S. Pokrovskaya, M. V. Shishkina, Dokl. AN SSSR, 125, 1269  
(1959); Ye. S. Pokrovskaya, Uch. zap. MGU, Khimiya, 71 (1941); Tr. In-ta  
nefti AN SSSR, 13, 29 (1959); Ye. S. Pokrovskaya, N. A. Shimanko, Dokl.  
AN SSSR, 123, 109 (1958); N. A. Shimanko, Ye. S. Pokrovskaya, V. I. Sidorenko,  
Neftekhimiya, 1, no. 3, 297 (1961)). Conclusions: Cyclohexyl benzene,  
dicyclohexyl benzene, and dicyclopentyl benzene were found to be  
1,4-substituted benzenes. Trisubstituted benzenes are substituted in  
1,2,4-, 1,2,3-, and 1,3,5-position, these being: cetyl orthoxylene  
(1,2,4-); cyclopentyl orthoxylene (1,2,4-, 1,2,3-); decyl metaxylene,  
cyclohexyl metaxylene (1,2,3-, 1,2,4-, 1,3,5-); paraxylene derivatives  
(1,2,4-). The weak bands of the 1,2,3- and 1,3,5-substitutions, as  
observed in a few spectra of paraxylene derivatives, can be ascribed to  
the migration of one of the methyl groups. Tetrasubstituted benzenes  
(paraxylene and mesitylene derivatives) are substituted not only in  
1,2,4,5-position but also in 1,2,3,4- and 1,2,3,5-position, which also  
indicates the migration of one of the methyl groups. The 1,2,3,4- and  
1,2,3,5-isomers could not be differentiated in the ultraviolet spectra.  
Pentasubstituted benzene and pentamethyl benzene have similar spectra  
which display bands characteristic of aplanar deformation vibrations of the  
C-H bond. There are 3 figures.

Card 2/3

Structural analysis of monocyclic ...

8/048/62/026/010/007/013  
B117/B186

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR  
(Institute of Petrochemical Synthesis of the Academy of Sciences USSR)

Card 3/3

S/048/62/026/010/008/013  
B117/B186

AUTHORS: Shishkina, M. V., Kusakov, M. M., and Taytovich, N. E.

TITLE: Infrared absorption spectra of indane series hydrocarbons

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya,  
v. 26, no. 10, 1962, 1260-1263

TEXT: Infrared absorption spectra of indane derivatives were analyzed within the range 5-15  $\mu$ . Ultraviolet spectra of these derivatives have been described in earlier papers (M. M. Kusakov, Ye. A. Prokof'yeva, M. V. Shishkina, Optika i spektroskopiya, 8, 27 (1960)). Spectra of these compounds from one to three C<sub>1</sub> - C<sub>10</sub> substituting groups displayed several characteristics that distinguish indanes from benzenes substituted correspondingly, and which allow of determining them within the range mentioned. Conclusions: The indane spectrum obtained here agreed with published data (J. Entel, C. H. Rouf, H. C. Howard, Anal. Chem., 25, 1303 (1953)). The spectra of 1-isopropylene indane and 1-cyclopentyl indane are similar to that of 1-methyl indane (same reference) but do not exclude the presence of an isomer substituted in position 2. A comparison

Card 1/2

S/048/62/026/010/008/013  
B117/B186

Infrared absorption spectra of...

between the spectra of 5-substituted indanes and that of 5-methyl indane indicated the presence of substituting groups both in position 5 and in position 4. Spectra of 5-substituted indanes and 1-isopropyl-5-tert-butyl indane displayed bands corresponding to 1,2,4-substitution. Spectral analysis shows that dicyclopentyl indane contains 4,7- and 5,6-isomers and perhaps even 4,6-isomers. In the case of 1-methyl-3-phenyl indane it could be proved that the phenyl-substituting group adds to the pentacyclic indane ring. The tertiary butyl groups of 1-isopropyl di-tert-butyl indane (N. E. Tsytovich, Ye. S. Pokrovskaya, Dokl. AN SSSR, 134, 119 (1960)) were found to be mostly in para- and ortho-position with respect to one another. The meta-isomer corresponding to the 1,2,3,5-substitution of the benzene ring is present in smaller amounts. There are 3 figures.

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR  
(Institute of Petrochemical Synthesis of the Academy of Sciences USSR)

Card 2/2

KUSAKOV, Mikhail Mikhaylovich; SHIMANKO, Nina Aleksandrovna; SHISHKINA, Margarita Vladimirovna; BAZHULIN, P.A., doktor fiziko-matem. nauk, otv. red.; LOSKUTOVA, I.P., red.; POLYAKOVA, T.V., tekhn. red.

[Ultraviolet absorption spectra of aromatic hydrocarbons] Ul'trafioletovye spektry pogloshcheniya aromaticeskikh uglevodorodov. Moskva, Izd-vo Akad. nauk SSSR, 1963. 269 p. (MIRA 16:2)  
(Hydrocarbons--Absorption spectra)

KUSAKOV, M. M.

MUSAYEV, I.A., ROSENBERG, L.M., NIFONTOVA, S.S., GALPERN, G.D.,  
NECHITAYLO, N.A., TERENTIEVA, YE.N., KUSAKOV, M.M., SANIN, P.I.

Investigating chemical composition of middle fractions of a  
sulphurous crude oil in the USSR

Report to be submitted for the Sixth World Petroleum Congress,  
Frankfurt, 16-26 June 63

S/204/63/003/001/008/013  
E075/E436

AUTHORS: Topchiyev, A.V. (deceased), Kusakov, N.M.,  
Kalyuzhnaya, G.D., Kaptsov, N.N., Koshevnik, A.Yu.,  
Razumovskaya, E.A.

TITLE: Characterization of the properties of homo- and  
copolymers of 2-methyl-5-vinylpyridine by the methods  
of light scattering and viscosimetry

PERIODICAL: Neftekhimiya, v.3, no.1, 1963, 90-93

TEXT: The authors determined the molecular weights and other  
properties of polymerized 2-methyl-5-vinylpyridine and its  
1:1 copolymer with styrene. The polymerizations were carried out  
by heating 2-methyl-5-vinylpyridine at 80°C for 12 hours in glass  
ampules with 0.1% benzoylperoxide. From the light scattering and  
viscosimetry data the following relationship was obtained

$$[\eta] = 6.17 \times 10^{-4} M_w^{0.615}$$

where  $[\eta]$  - intrinsic viscosity and  $M_w$  - mean molecular weight.  
The mean molecular weights of the polymer fractions obtained by  
Card 1/2

Characterization of ...

S/204/63/003/001/008/013  
E075/E436

petroleum-ether precipitation, ranged from  $1 \times 10^6$  to  $3 \times 10^4$ .  
The mean molecular weights of the copolymer were  $4.3 \times 10^5$  and  
 $1.1 \times 10^5$  for the polymerization times of 12 and 6 hours  
respectively. There is 1 table.

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR  
(Institute of Petrochemical Synthesis AS USSR)

SUBMITTED: August 18, 1962

Card 2/2

S/030/63/000/003/011/014  
B117/B186

AUTHORS: Terenin, A. N., Academician, Kusakov, M. M., Doctor of Chemical Sciences, Yel'yashevich, M. A., Academician BSSR

TITLE: Symposium on molecular structure and spectroscopy

PERIODICAL: Akademiya nauk SSSR. Vestnik<sup>33</sup>, no. 3, 1963, 118-119

TEXT: This is a brief report on the Simpozium po molekuljarnoy strukture i spektroskopii (Symposium on Molecular Structure and Spectroscopy) which took place in Tokyo from Sept. 10 to 15, 1962. The Symposium was attended by 900 scientists, among them 700 from Japan and about 200 from 25 other countries. The USSR was represented by V. N. Kondrat'yev, member of the Ispolnitel'nyy komitet Mezhdunarodnogo soyuza teoreticheskoy i prikladnoy khimii (Executive Committee of the International Union for Theoretical and Applied Chemistry) and by the authors of this paper. More than 250 lectures were delivered.

Card 1/1

VED PRAKASH GUPTA; KUSAKOV, M.M.

Infrared absorption spectrum of  $\alpha$ -phenylpyridine. Zhur.  
prikl. spektr. 3 no.5:428-433 N '65. (MIRA 18:11)

GUSEL'NIKOV, L.Ye.; KOSHEVNIK, A.Yu.; KOSHELKOVA, I.M.; KUSAKOV, N.N.;  
RAZUMOVSKAYA, E.A.

Relation between the molecular weight and intrinsic viscosity of  
some organosilicon polymers. Vysokomol. soed. 7 no.5:862-865 My  
'65. (MIRA 18:9)

I. Institut neftekhimicheskogo i gornogo zhiv.

KUSAKOV, M.M.; KONOVALOVA, L.A.; KONSTANTINOV, A.A.

High-pressure rotary viscosimeter for small amounts of liquid.  
Inzh.-fiz. zhur. 7 no. 3:27-33 Mr '64. (MIRA 17:5)

1. Institut neftekhimicheskogo sinteza AN SSSR, Moskva.

KUSAKOV, M.M.; KOSHEVNIK, A.Yu.; NEKRASOV, D.N.; CHIRIKVA, V.P.; SHUL'PINA, L.M.

Thermal diffusion fractionation of polymer solutions. Dokl. AN SSSR 158  
no. 5:1152-1154 O '64. (MIRA 17:10)

1. Institut neftekhimicheskogo sinteza im. A.V. Topchiyeva AN SSSR.  
Predstavлено академиком V.A. Karginым.

KUSAKOV, M.M.; KOSHEVNIK, A.Yu.; RAZUMOVSKAYA, E.A.

Photoelectric instrument for investigating light scattering in  
polymer solutions. Vysokom. soed. 5 no.5:756-759 My '63.

(MIRA 17:3)

1. Institut neftekhimicheskogo sinteza AN SSSR.

KUSAKOV, M.M.; SHISHKINA, M.V.; PROKOF'YEVA, Ye.A.; KISLINSKIY, A.N.;  
SANIN, P.I.; TERENT'YEVA, Ye.M.; STEPANTSEVA, T.G.

Investigation of the oscillation spectra of hydrocarbons  
of the 1,1-diphenylethane series. Neftekhimia 1 no.3:317-  
328 My-Je '61. (MIRA 16:11)

1. Institut neftekhimicheskogo sinteza AN SSSR.

KRENTSEL', B.A.; SIDOROVA, L.G.; SHISHKINA, M.V.; KUSAKOV, M.M.; KORENEVSKAYA,  
F.V.; SHCHEKIN, V.V.

Conversion polymerization of  $\alpha$ -olefins. Neftekhimiia 2 no.5:  
705-708 S-0 '62. (MIRA 16:1)

1. Institut neftekhimicheskogo sinteza AN SSSR.  
(Olefins) (Polymerization)

KUSAKOV, M.M.; POKROVSKAYA, Ye.S.; SHISHKINA, M.V.; SHIMANKO, N.A.;  
PROKOF'YEVA, Ye.A.

Study of the structure of monocyclic hydrocarbons based on absorption  
spectra. Izv. AN SSSR. Ser. fiz. 26 no.10:1257-1260 O '62. (MIRA 15:10)

1. Institut neftkhimicheskogo sinteza AN SSSR.  
(Hydrocarbons—Spectra)

GIMATUDINOV, Shamil' Kashafovich, dots.; KUSAKOV, M.M., prof.,  
retsenzent; Prinimali uchastiye: GUZHOV, A., dots.,  
retsenzent; POLYAKOV, G., kand. tekhn. nauk, retsenzont;  
MURAV'YEV, I.M., red.; SAVINA, Z.A., ved. red.; VORONOVA,  
V.V., tekhn. red.

[Physics of oil-bearing beds] Fizika nefti:nogo plasta. Pod  
red. I.M.Murav'eva. Moskva, Gostoptekhizdat, 1963. 274 p.  
(MIRA 16:12)

1. Moskovskiy institut neftekhimicheskoy i gazovoy pro-  
myshlennosti im. akad. Gubkina (for Gimatudinov).  
(Petroleum geology)

L 49011-65 ENT(m)/EMP(j) Pe-4 RM

ACCESSION NR: AR5012257

UR/0058/65/000/003/D034/D034

SOURCE: Ref. zh. Fizika, Abs. 3D254

19

B

AUTHOR: Kusakov, M. M.; Niyazov, A. M.; Sidorenko, V. I.; Shimanko, N. A.;  
Shishkina, N. V.

TITLE: Some properties of the infrared and ultraviolet absorption spectra of  
naphthalene-aromatic ketones

CITED SOURCE: Tr. Komis. po spektroskopii. AN SSSR, vyp. 1, 1964, 370-381

TOPIC TAGS: ir absorption spectra, ultraviolet absorption spectra, naphthalene  
aromatic ketone

TRANSLATION: It is shown that the frequency  $1675 \text{ cm}^{-1}$  of the valent number for the  
carbonyl ketone group keeps its value when the 5-member naphthalene cycle is changed  
to a 6-member cycle and during the injection of various numbers of alkyls into  
naphthalene and benzene cyclic compounds. The carbonyl group affects the frequency  
of the deficiency number of C-H aromatic nuclei bonds. In the infrared absorption  
spectra a series of characteristic bands was found, which made it possible to dis-

Card 1/2

B 5012257

ACCESSION NR: AR5012257

tinguish between the spectra of these ketones with 5- and 6-member cycles and to identify naphthene-aromatic ketones derived from naphthenic acids. Three specified absorption regions were found in the ultraviolet absorption spectra: 3000-3500, 2400-2800 and 2200-2400 Å. The second region characterizes the number, position and nature of substituents in the aromatic ketone compound, and the third--the presence of a carbonyl group, the nature of the aromatic nucleus and its substituents, and also their number and position. This latter region can be used for characteristics of the degree of reduction of ketones to corresponding hydrocarbons.

SUB CODE: OP ENCL: 00

Card 2/2

S/137/62/000/003/032/191  
A006/A101

AUTHORS: Vlodavskiy, I. Kh, Gorlovskiy, S. I., Kusakova, G. M.

TITLE: The use of complex-forming collectors for tungstenite flotation

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 9 - 10, abstract  
3669 ("Obogashcheniye rud", 1961, no. 3, (33) 3 - 7)

TEXT: Many of the known complex-forming reactive agents can be used in flotation practice. In particular,  $\alpha$ -nitroso- $\beta$ -naphthol was studied. However, its substantial deficiency is its limited solubility in products suitable to be used in combination with oil collectors. Therefore some other compounds were synthesized and tested as collectors; these compounds possess an analogous complex-forming group and are characterized by a better solubility in water or in petroleum hydrocarbons. This is a bisulfate derivative of  $\alpha$ -nitroso- $\beta$ -naphthol, 1-nitroso-2-naphthol-8-Na sulfoxide, dinitro resorcin and nitro-derivatives of alkylated  $\beta$ -naphthol, soluble in organic substances. Experiments have shown that  $\alpha$ -nitroso- $\beta$ -naphthol and reagents obtained by nitrosation of alkylated  $\alpha$ -nitroso- $\beta$ -naphthol have a higher selective effect than oleic acid. Of the reagents tested the nitro-derivative of alkylated  $\beta$ -naphthol with an alkyl radical containing 8 - 12 C

Card 1/2

S/137/62/000/003/032/191  
A006/A101

The use of complex-forming...

atoms, is the most interesting one. It has a high selective effect and is cheaper than dimethyl glyoxime and cupferron; its solubility in organic solvents is better than that of  $\alpha$ -nitroso- $\beta$ -naphthol. This reagent makes it possible to obtain from a very hard to concentrate W-product a concentration degree as high as 44 after one refining, at a satisfactory extraction of the metal into the concentrate.

A. Shmeleva

[Abstracter's note: Complete translation]

Card 2/2

KUSAKOVA, H.

The work of Frantisek Richter. III. p. 289. (Biulleten Astronomiceskikh Institutov Chekhoslovakii. Bulletin of the Astronomical Institutes of Czechoslovakia.) (Vol. 11, 1956.)

SO: Monthly List of East European Accession (EEAL) Lc, Vol. 6, no. 7, July 1957. Uncl.

ZAKS, Saveliy Leonidovich; KUSAKOVA, M.M., prof., red.; DUBROVINA,  
N.D., ved. red.; YAKOVLEVA, Z.I., tekhn. red.

[Increasing gas drive recovery of oil from the pool; dis-  
placements under conditions of mutual solubility of the  
displacing and displaced phases and retrograde evaporation]  
Povyshenie nefteotdachi plasta nagnetaniem gazov; vytessnenie  
v usloviakh vzaimnoi rastvorimosti vytessniaiushcheli i vyte-  
sniaemoi faz i obratnogo ispareniya. Pod red. M.M.Kusakova.  
Moskva, Gostoptekhizdat, 1963. 189 p. (MIRA 16:8)  
(Oil reservoir engineering)

LUNENOK-BURMAKINA, V.A. [Lun'onok-Burmakina, V.A.]; KUSAKOVSKAYA, T.M.  
[Kusakovs'ka, T.M.]

Isotope investigation of the mechanism of oxidation of  
manganese and silver cations by ozone. Dop. AN UkrSR no.2:  
226-228 '65. (MIRA 18:2)

1. Institut fizicheskoy khimii AN UkrSSR.

KUBIK, F.

Contribution to the study of the flora of Montenegrin-Albanian and  
Macedonian mountains. p. 178 (GLASNI, Series II/8, v. 4/5, 1950/52,  
Sarajevo, Yugoslavia)

SO: Monthly list of East European Accessions, (EEA), Lj., Vol. 4, no. 1  
Jan. 1950, Uncl.

KUSAN, Fran (Zagreb)

Domestic species of the Humiperus genus, their distribution and role  
in Yugoslav flora. Farmaceut gl Zagreb Supplement (18) no.5:29-30  
'62

1. Institute of Pharmaceutical Botany, Zagreb.

KUSAN, Fran  
SURNAME (in caps); Given Names

Country: Yugoslavia

Academic Degrees: Professor

Affiliation: not given

Source: Zagreb, Farmaceutski Glasnik, No 4-5, April-May 1961, pp 113-114.

Data: "In the Region of Balkan Prikly Astragali."

KUSAN, Fran

Importance of indigenous pines for the development of vegetation in Croatia. Biol glas 14 no.1/2:23-76 '61.

1. Zavod za farmaceutsku botaniku Farmaceutskog fakulteta Sveucilista u Zagrebu. Clan Urednistva, "Bioloski glasnik, Periodicum biologorum".

\*

KUSANOVA, V. A.

RUSANOVA, V. A. --"Investigation of the Capacity of Water Pipes of an Irrigation Network." Min Agriculture USSR, All-Union Acad of Agricultural Sci imeni Lenin, All-Union Sci Res Inst of Hydrotechnology and Reciamation, Moscow, 1956  
(Dissertation for the degree of Candidate in Chemical Science.)

KNIZHNAY LETOPIS  
No 41, October 1956

KUSAR V.  
SKALICKY, B.; KUSAR, V.

Evolutio spontanea thoracopagum. Zdrav. vest., Ljubljana 23  
no.3-4:74-79 1954.

1. Porodn.-Gin. oddelek in prosekturna Spl. bolnice v Mariboru  
(sefa: prim. dr. B.Skalicky in prim. dr. V.Kusar)  
(MONSTERS)

\*thoracopagus, spontaneous evolution)

KUSAR, Valentin

KUSAR, Valentin; MARCHETTI, J.

Eosinophilic granuloma of the bones. Zdrav. vest., Ljubljana 23  
no.3-4:88-89 1954.

1. Prosekta Splošne bolnice v Mariboru (predstojnik prim. dr.  
Valentin Kusar)

(BONES, dis.

\*eosinophilic granuloma)

(EOSINOPHILIC GRANULOMA

\*bones)

KUSAR, Valentin

Discontinuitas duodeni congenita. Zdrav.vest., Ljubljana 24 no.4:  
144-145 1954.

1. Prosektura splošne bolnice v Mariboru-sef: primarij dr. Valentin  
Kusar.

(DUODENUM, abnormality,  
atresia)  
(ABNORMALITIES,  
atresia of duodenum)

KUSAR, Valentin

Calculusis pseudodiverticuli submucosi reg. pyloricae. Zdrav.vest.,  
Ljubljana 24 no.4:145-147 1954.

1. Prosekta splosne bolnice v Mariboru-sef: Primarij dr. Valentin  
Kusar.

(STOMACH, diseases,  
pseudodiverticulum caused by calculi)

(PYLORUS, calculi,

with stomach pseudodiverticulum)

(CALCULI,

pylorus with obstruct. & gastric pseudodiverticulum)

KOVALENKO, P.N., KUGAYEIVANTS, L.N.

Conditions for separating copper and arsenic when present  
together in a sulfuric acid solution. Izv. vys. ucheb. zav.,  
khim. i khim. tekhn. 8 no.1:17-22 '65. (MIRA 18:6)

I. Rostovskiy gosudarstvennyy universitet, kafedra analiticheskoy  
khimii.

KUSCER, D.

Stratigraphic system and stratigraphic nomenclature. p. 237.  
GEOLOGIJA. (Geološki zavod Slovenije) Ljubljana, Yugoslavia.  
No. 4, 1958.

Monthly list of East European Accessions (EEAI) LC, Vol. 8, no. 8, Aug. 1959  
Uncl.

RAMOVŠ, Anton; GRIMŠICAR, A.; PAVLOVEC, R.; DROBNE, F.; PLENICAR, Mario,  
dr.; KUSCER, D.; US, H.

Reports on the activity of the Slovenian Geologic Society during  
1957-58. Geologija Slov 6:316-322 '60 (publ.'61).

1. Predsednik Slovenskega geoloskega drustva (for Ramovš). 2. Tajnik Slovenskega geoloskega drustva (for Grimsicar). 3. Refernt za predavanja Slovenskega geoloskega drustva (for Pavlovec). 4. Blagajnik Slovenskega geoloskega drustva (for Drobne). 5. Komisija za standard geoloske karte Slovenskega geoloskega drustva (for Plenicar). 6. Komisija za geolosko nomenklaturor Slovenskega geoloskega drustva (for Kuscer). 7. Sekcija za srednjesolski podk geologije Slovenskega geoloskega drustva (for Us).

"APPROVED FOR RELEASE: 03/13/2001

CIA-RDP86-00513R000927820009-4

KUSCER, D.

Discussion on the stratigraphic nomenclature. Geologija  
Slov 6:331 '60 (publ.'61).

APPROVED FOR RELEASE: 03/13/2001

CIA-RDP86-00513R000927820009-4"

KUSCER, D.

"Underground waters. Dynamic and chemical hydrology. Research,  
exploitation and evaluation of resources" by H. Schoeler.  
Reviewed by D. Kuscer. Rud met zbor no.1:75 '62.

KUSCER, D.

"Hydrogeology of the deposits of mineral resources" by G. N.  
Kamenskij [Kamenskiy, G.N.], P.P.Klimentov, and A.M.Ovchinnikov.  
Reviewed by D. Kuscer. Rud met zbor no.1:78 '62.

KUSCER, D.

"Hydrogeology of Czechoslovakia" by Ota Hynie.  
waters." Reviewed by D. Kuscer. Rud met zbor no.1:80 '62.

"APPROVED FOR RELEASE: 03/13/2001

CIA-RDP86-00513R000927820009-4

KUSCER, D.

"Tectonics of the seminests of Netzschkau" by Joachim Hofmann.  
Reviewed by D. Kuscer. Rud met zbor no.2:196 '62.

APPROVED FOR RELEASE: 03/13/2001

CIA-RDP86-00513R000927820009-4"

"APPROVED FOR RELEASE: 03/13/2001

CIA-RDP86-00513R000927820009-4

KUSCER, D.

"Oligocene Foraminifera of the Dobbertin (Mecklenburg) shaft" by  
Yvonne Kisel. Reviewed by D. Kuscer. Rud met zbor no.2:196-197  
'62.

APPROVED FOR RELEASE: 03/13/2001

CIA-RDP86-00513R000927820009-4"

KUSCER, D.

"Manual of field geology" by Robert R. Compton. Reviewed  
by D. Kuscer. Rud met zbor no.3:293-294 '62.

KUSCER, D.

"Tectonics in the sub-Andes of the Central Ucayali area, East Peru" by Edwin Koch. Reviewed by D. Kuscer.  
Rud met zbor no.3:294 '62.

KUSCER, D.

"Comparative tectonics of ancient tables" by Nikolaj S. Schatski  
[Shatskiy, Nikolay Sergeyevich]. Reviewed by D. Kuscer.  
Rud met zbor no.3:294 '62.

KUSCER, D.

"Fundamentals of geology for engineers" by Hilmar Schumann.  
Reviewed by D. Kuscer. Rud metabor no. 3:294-295 '62.

SIRCA, F.; DOBOVISEK, Bogomir, docent, dr. inz.; GRAFENAUER, S.; KOSOVINC, I.;  
HAMRLA, B.; VODOPIVEC, F.; KUSCHER, D.; KERNIC, J.; DROBNE, F.;  
PAVKO, D.; CAZAFUJA, K.; TURK, St.; OCEPEK, Drago, docent, dr. inz.;  
ROSINA, A.; ZUMER, M.; SOVINC, I.

New books. Rud met zbor 4:431-457 '63.

1. Clanovi Uredniskega odbora, "Rudarsko-metalurski zbornik"  
(for Dobovisek and Ocepek).

PAULIN, A.; OCEPEK, D.; CAZAFURA, K.; KUSCER, D.; VODOPIVEC, F.; SOVINC, I.;  
PAVKO, D.; JURCA, S.; KERSNIC, V.; DRNOVSEK, J.; GRAFENAUER, S.;  
KERNC, J.

New books. Rud met zbor 3:307-334 '64.

URSIC, S.; KUSCER, I.; PAHOR, S.

For the young mathematicians and physicists. Obz mat fiz 10 no.  
4:190-192 D '63.

KUSCER, I.

For young physicians. Obz mat fiz 10 no.3:144 N°63.

1. Član Uredniškega odbora, "Obzornik za matematiko in fiziko".

KUSCER, Ivan

Ergodic problem in classical statistical mechanics. Ob mat fiz  
9 no.2:49-60 Ag '62.

1. Clan Uredniskega odbora, "Obzornik za matematiko in fiziko."

KUSCAR, L.

KUSCAR, L.; Mihailovic, M. A chronograph for recording variable counting rates. In English. p. 51

Vol. 2, May 1955

REPORTS

SCIENCE

Ljubljana

So: East European Accession, Vol. 6, No. 3, March 1957

KUSCH, L.K., inzh.

Installation and removal of buoys by cutters. Rech.transp.  
18 no.9:51 S '59. (MIRA 13:2)  
(Buoys)

Distr: 4E3c/4E3d/4E2c

16-

Measurement of the absorption in graphite of electrons

5  
3

from muon decays. W. Kusch (Univ. Lodz, Poland). *Nuovo Cimento* 11, 762-4 (1953). Exptl. results were compared with absorption curves calcd. on the assumption that a linear relation exists between the actual electron path and the energy  $Z = \alpha E$  on the basis of the Michel (C.A. 44, 70724) spectrum ( $\rho = 0.55$ ). Best agreement was obtained for  $\alpha = 0.82$ . The result  $dE/dZ = 1.70 \pm 0.16$  m.e.v./g.-sq. cm. agreed within exptl. error with the losses predicted by the Halpern-Hall formula for mean energy of the electron spectrum from muon decay.

B. L. Harris

POLAND/Nuclear Physics - Penetration of Charged and Neutral  
Particles Through Matter.

C

Abs Jour : Ref Zhur Fizika, № 1, 1960, 606  
Author : Kuschi, W.  
Inst : -  
Title : Measurement of Absorption in Graphite of Electrons  
from Meson  $\mu$  Decay  
Orig Pub : Acta phys. polon., 1958, 17, № 5, 295-309  
Abstract : See Referat Zhur Fizika, 1959, № 2, 2884.

Card 1/1

- 29 -

CHOJNACKI, S.; JASINSKI, A.; KUSCH, W.; KOWNACKI, J.; LANCMAN, H.;  
YUTLANDOV, J.A.

$\gamma$  spectra of  $^{165}\text{Tu}$  and  $^{167}\text{Tu}$ . Bul Ac Pol mat 8 no.6:407-411 '60.  
(EEAI 10:6)

1. Institute of Nuclear Research, Polish Academy of Sciences.  
Presented by H.Niewodniczanski.  
(Gamma ray spectrometry) (Thulium)

KUSCH, W.

86666

9,6150  
26.2244

P/045/60/019/006/005/012  
B011/B059

AUTHORS: Yeffseyev, W. S., Komarov, W. J., Kusch, W., Roganov, W.S.,  
Tchernogorova, W. A., Szymczak, M.

TITLE: Fast-neutron Scintillation Layer Detector for Measurements  
Against a Gamma Background

PERIODICAL: Acta Physica Polonica, 1960, Vol. 19, No. 6, pp. 675-682

TEXT: The authors describe a scintillation layer detector with high efficiency for fast neutrons and low efficiency for gamma rays. The layer detector is based upon the difference between the range of protons and electrons of the same energy. The detector is designed for neutron measurements in the energy range between 5 and 20 Mev and consists of 28 layers made of plastic scintillators (on the basis of polystyrene), and is arranged in two sections, one behind the other. In each section, the light from the even layers is directed into two FEU-29 photomultipliers, the light from the odd layers is led into two other FEU-29 photomultipliers.

Card 1/2

86666

Fast-neutron Scintillation Layer Detector P/045/60/019/005/005/012  
for Measurements Against a Gamma Back- B011/B059  
ground

If the electron energy is sufficiently high so that the electron can pass into the adjacent layer, then both photomultiplier sets (odd and even) will produce pulses simultaneously. The electronic circuit cancels those coincidences and allows only single pulses (produced in any of the photomultipliers) to reach the pulse-height analyzer. In order to characterize the decrease in counting efficiency for neutrons and gamma rays when the coincidence circuit (resolution  $0.4\mu$  sec, veto pulse  $0.6\mu$  sec) is turned on, the discrimination coefficient (ratio of pulses with coincidence circuit off to pulses with coincidence circuit on, both at the same level of the integral discriminator) is introduced. For neutrons, this coefficient did not exceed 1.5, for gamma quanta, however, it had much higher values. The authors thank N. W. Sizov for help in the work with the Cockcroft-Walton-type accelerator, as well as D. K. Akimov and V. A. Zapevalov for their assistance in the construction of the electronic part. There are 6 figures and 6 references: 2 Soviet and 3 US.

ASSOCIATION: Joint Institute of Nuclear Research, Dubna, USSR

SUBMITTED: April 6, 1960  
Card 2/2

IEFTSEYEV, W.I.; KOMAROV, W.I.; KUSCH, W.; ROGANOV, W.S.; TCHERNOGOROVA, W.A.;  
SZYMCAK, M.

Asymmetry in the angular distribution of the neutrons emitted in the  
 $\pi^-$  meson capture process in calcium. Acta physica Pol 21 no.4:313-327  
Ap '62.

1. Joint Institute for Nuclear Research, Laboratory of Nuclear  
Problems, Dubna.

KUSCHEVA-MARKOVA, N.

The Hofmeister series of anions and the purification of crystal systems. D. Balintov and N. Kusheva-Markova. // Annalen Phys., Sitz 33, Fiz. ser. Phys. et math. Tavle 3, Pt. 1, 63-7(1933/64) (German summary). --The ease of removal of anions from crystals that have been formed in the presence of thiocyanate, nitrate, and sulfate ions follows the Hofmeister series in acidic (pH 2.6) and alk. (pH 10.0) media.  $K_2SO_4$ ,  $KNO_3$ , and  $KCl$  were crystd. from normal solns. of the various anions; then the no. of washings necessary to remove the anions was detd. Boric acid and salicylic acid behaved like the crystals in alk. and acid solns., resp. The ease of purification of crystals is related to the ease of water loss by the same crystals upon being heated.

G. Meguerian

RA  
MET

(1)

KUZMINSKY, G.

Role of histamine in the reduction of bleeding time after <sup>AD</sup>  
adrenaline. G. Kuzminsky and H. Schimassek (Univ.  
Mainz, Ger.) *Naturforsch Arch. expil. Pathol.*  
*Pharmakol.* 226, 68 (1950); cf. preceding abstr.—The  
shortening of bleeding time in rabbits produced by adrena-  
line was abolished or prevented by the antihistaminic sub-  
stance, caviton or leviton. Histamine acts as a mediator  
in this effect of adrenaline, presumably after the chem. trans-  
formation of the latter by the organism. A. E. Meyer. (1)

KUSCHINSKY, G.

MD ✓ Reaction mechanism of digitalis constituents. G. Kuschinsky, G. Lange, Ch. Scholtissek, and F. Turba (Univ. Mainz, Ger.). *Blocken, Z.* 327, 314-30 (1958); cf. *C.A.* 48, 8280d. —In recent investigations on the action of digitalis constituents on the metabolism of phosphates and on the contractile proteins, the enhanced extractability of actinomycin (I) from finely divided muscle ext. was observed. This loosening influence of digitoxin (II) on the binding of I has been examp. with radioactive digoxigenin acetate (III) in which C<sup>14</sup> is in the pharmacologically active lactone ring which is stable to biol. action (cf. *C.A.* 48, 7787d). The significance of the lactone ring has been examp. by comparative tests of simpler synthetic lactones. A reaction mixt. of 20 g. AcOCH<sub>2</sub>Ac, 32 g. BrCH<sub>2</sub>CO<sub>2</sub>Et, 10 g. Zn shavings and 100 ml. abs. C<sub>6</sub>H<sub>6</sub> was refluxed 1 hr., decompd. with dil. HCl, filtered and extd. with AcOEt. The neutral, washed, and dried ext. was evapd., treated overnight with Ac<sub>2</sub>O and pyridine, evapd., chromatographed on Al<sub>2</sub>O<sub>3</sub>, eluted with Et<sub>2</sub>O-AcOEt(1:1) and distd. yielding 7.6 g.  $\beta$ -methyl- $\alpha$ , $\beta$ -butenolide, *b*<sub>10</sub> 100-8°. Butyrolactone (6.6 g.) and 4.3 ml. Pits were warmed on the steam bath for 2 hrs. under anhyd. conditions and finally brought to 180°. Distn. at 15 mm. gave 10 g. BrCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>COBr (IV), *b*<sub>10</sub> 90-1°. IV (7.8 g.) was treated overnight at 0° with Cl<sub>2</sub>N<sub>2</sub> (from 10 g. MeN(NO)<sub>2</sub>CO<sub>2</sub>Et), distd. *in vacuo*, warmed with AcOH to cessation of N evolution, evapd. *in vacuo*, taken up in pure AcOH, shaken at room temp. in the dark for 2 days with equiv. amt. AcOAg and filtered. After evapn., the residue was again treated with a small amt. of AcOAg and the oily residue was purified by elution from

Al<sub>2</sub>O<sub>3</sub> with C<sub>6</sub>H<sub>6</sub>-petr. ether (1:1) and distd. yielding 6.5 g. ketodiol diacetate, AcOCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>COCH<sub>2</sub>OAc, *b*<sub>10</sub> 122-32°. A reaction mixt. of 4.2 g. diacetate, 5 g. BrCH<sub>2</sub>CO<sub>2</sub>Et and 3 g. Zn in 10 cc. abs. C<sub>6</sub>H<sub>6</sub> was refluxed for 2 hrs., decompd. with dil. HCl, filtered, neutralized with KHCO<sub>3</sub>, clarified with HCl, and extd. with AcOEt. The washed and dried ext. was evapd., acetylated with 5 ml. Ac<sub>2</sub>O and 5 ml. pyridine, purified over Al<sub>2</sub>O<sub>3</sub> and eluted with Et<sub>2</sub>O-AcOEt (1:1) to yield 3.2 g.  $\beta$ -( $\omega$ -acetoxy- $\alpha$ -propyl)- $\alpha$ , $\beta$ -butenolide, *R*, 0.45 (cf. Zaffaroni, et al. *C.A.* 43, 3872f). Condensation of 0.9 g. H<sub>3</sub>NCH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>CO<sub>2</sub>H with 2 g. C<sub>6</sub>H<sub>5</sub>(CO)<sub>2</sub>O in 40 ml. AcOH by refluxing 8 hrs. gave 2 g.  $\gamma$ -phthalimidobutyric acid, *m.* 115°, converted with SOCl<sub>2</sub> into the acid chloride and treated with CH<sub>2</sub>N<sub>2</sub> to give 2.4 g. 5-phthalimido-2-pentanone acetate, *m.* 137°. Treatment of 3 g. ketone acetate with 1.2 ml. BrCH<sub>2</sub>CO<sub>2</sub>Et and 1 g. Zn in 40 ml. abs. C<sub>6</sub>H<sub>6</sub>, working up, reacylating with C<sub>6</sub>H<sub>5</sub>(CO)<sub>2</sub>O, purification over Al<sub>2</sub>O<sub>3</sub> and elution with Et<sub>2</sub>O-AcOEt (1:1), gave 0.7 g.  $\beta$ -( $\omega$ -phthalimido- $\alpha$ -propyl)- $\alpha$ , $\beta$ -butenolide, *m.* 108-9°, *R*, 0.58. Although more I is extd. from finely ground muscle in the presence of II, the addn. of II to coarsely divided muscle leads to a sealing off of the cell boundaries so that less I is extd. The same behavior was noted on addn. of III, G, and K-strophanthin and the above synthetic lactones. With addn. of dehydrodigitox-

(3)

(OVER)

*G. Lany* 95/11  
C. R. Addinall

C. KUSCHINSKY, G. LANY,<sup>111</sup>  
cholesterol, cholic acid, cholanic acid, dehydrocorticosterone acetate  
acetate and glucuronide; 17-hydroxycorticosterone acetate  
and progesterone, increased extn. of I from finely ground and  
also from coarsely divided muscle was observed. No change  
by either procedure was produced by addn. of cortisone,  
hydrocortisone, cholesterol, deoxycholic acid, digitonin,  
estradiol, testosterone, estrone and sucrose. Rutin and  
 $\text{Ca}^{++}$  had the sealing off effect without increased extn.  
from finely divided material. The relation of the duration  
of the binding of digitalis constituents to the duration of  
pharmacol. activity was investigated by detn. of the duration  
of III in biol. material as well as the chem. location of  
III. That the pharmacol. activity persists in muscle beyond  
the presence of III is shown by its distribution and elimination  
*in vivo* and the persistence of increased extractability of  
I from muscle *in vitro* after washing out the pre-used III.  
The change of the  $R_f$  value of II brought about by lipide-  
contg. muscle ext., the acceleration of the extractability of  
lipide- $\text{P}^4$  from muscle homogenates by III and the liberation  
of lipide- $\text{P}^4$  from muscle *in vivo* after administration of  
III all suggest that III binds a muscle lipide component and  
then sets it free.

*3/2*

WUSATOWSKI, Zygmunt; KUSCHKA, Winfryd

Evaluation of the rolling theory in the light of measurements.  
Problemy proj hut maszyn 10 no.11:332-337 N '62.

1. Politechnika Slaska, Gliwice.

KUSEBAYEVA, F.Ya.

Water balance in some rodent species. Opyt izuch. reg. fiziol. funk.  
6:106-109 '63  
(MIRA 17:3)

1. Laboratoriya ekologicheskoy fiziologii ( zav. - prof. A.D.  
Slonim) Instituta fiziologii imeni Pavlova AN SSSR.

KUGELJ, G.

Yugoslavia (430)

Law- Serials

On the new aspects of studying law. p. 14  
LJUDSKI PRAVNIK. (Društvo pravnikov  
Ljudske Republike Slovenije) Ljubljana  
(Monthly association of Jurists of  
the People's Republic of Slovenia) Vol. 2,  
no. 1-2, 1947

East European Accessions List. Library  
of Congress, Vol. 1 no 13, November 1952.

UNCLASSIFIED

HUSEI, G.

Yugoslavia (430)

Technology - Serials

International conference of universities.  
p. 8. RADIC SLOVENIJA. Ljubljana.  
(Weekly illustrated information bulletin  
of the radio station at Ljubljana with schedules of  
the radio stations of

East European Acquisitions List Library of Congress,  
Vol. 1 no 13, November 1952. UNCLASSIFIED.

"Card 1 of 2"

KUGMIJ, S.

Yugoslavia (430)

Ljubljana and Zagreb). Vol. 1, no. 1,  
1951

East European Accessions List. Library of  
Congress, Vol. 1, no. 13, November 1952

UNCLASSIFIED

"Card 2 of 2"

KUSELEV, A.V.

Isotherm and heat of adsorption of methanol on carbon black.  
N. N. Aygu, O. M. Dzhigit, A. V. Kuselev, and K. D. Shcherbakova  
[DOKL. Akad. Nauk SSSR, 1983, 27, 1183]—Isotherm and  
heat of absorption of MeOH on C black are determined at 19° and  
pressures up to the saturated v.p. of MeOH. The curves obtained  
are of complicated character and can be divided into several parts  
separated by inflection points and breaks. The explanation of this  
phenomenon is given in terms of adsorption stages accompanied  
by abrupt thermal changes. The stages are: adsorption on highly  
active centres, formation of a "mobile" monolayer, formation of  
a "compact" monolayer and of a second layer, and formation of the  
third and further layers with heat of adsorption approaching heat  
of condensation of MeOH.  
S. R. Lachowicz.

KUSELEVA, N. A.

USSR/Chemistry - Petroleum

Jun 51

"Development of Oxidation After Removal of the Catalyst From the Reaction Medium," V. K. Tsykovskiy,  
N. A. Kuseleva

183T51  
"Zhur 'Prik Khim' Vol XXIV, No 6, p 672

On basis of results obtained in liquid-phase oxidation of kerosene, idea of colloidal quasi-heterogeneous catalysts as substances forming intermediate products with O<sub>2</sub> of air and remaining chemically unchanged until end of oxidation reaction is obsolete. Catalyst, if it does form intermediate products with O<sub>2</sub> of air, does so only during initial stage of

183T51

reaction, which is infinitesimally short as compared to total duration of reaction. Initial stage of oxidation reaction proceeds catalytically, then goes on autocatalytically with definite chain characteristics.

183T51

KUSELEVA, V. V.

USSR/Chemistry - Pyrimidine Derivatives  
Aniline

Now 48

"Research in the Field of Tetrahydropyrimidine Compounds: II, Synthesis of 4-Phenyl-6-Oxotetrahydropyrimidine Derivatives," V. M. Rodionov, V. V. Kuseleva, 13 pp

"Zhur Obshch Khim" Vol XVIII, No 11

Studied formation of pyrimidine derivatives by reaction of N-acyl-beta-alanine with SOCl<sub>2</sub> at 80° C and subsequent treatment with NH<sub>3</sub>. Found that the nature of the acyl and replacement of the amide group by an anilide group influenced the closing of the pyrimidine ring. The reaction of N-benzoyl-beta-phenyl-beta-alanine with SOCl<sub>2</sub> with subsequent treatment with aniline led to the formation of N,N'-diphenyl-beta-benzamido-beta-phenylpropion-amidine hydrochloride and not the pyrimidine derivative. Prepared 2-methyl-6-phenyl-, 2,6-diphenyl- and 2-ethoxy-6-phenyl-3,4,5,6-tetrahydro-4-pyrimidine. Submitted 2 Jun 48.

P 67/49T25

KUSELEVA, V. V.

Rodionov, V. M., Kuseleva, V. V., "Interaction of  $\beta$ -phenyl- $\beta$ -analine and Hypobromite. Synthesis of 4-Phenylglyoxalidone and its acyl Derivatives." (p. 1905)

SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii), 1948, Volume 18, (80), No. 11

KUSELEVA, V. V.

Rodionov, V. M., Kuseleva, V. V., "Research in the Field of Tetrahydropyrimidine Compounds. II. Synthesis of 4-Phenyl-6-Oxotetraphdropyrimidine Derivatives." (p. 1912)

SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii), 1948, Volume 18, (80), No. 11

KUSELEVA, V. V.

USSR/Chemistry - Aniline  
Hypobromites

Nov 48

"Interaction of Beta-Phenyl-Beta-Aniline and Hypobromite: Synthesis of 4-Phenylglyoxylidone and Its Acyl Derivatives," V. M. Rodionov, V. V. Kuseleva, 6 3/4 pp

"Zhur Obshch Khim" Vol XVIII, No 11

Prepared 4-phenyl-2-imidazolidone from beta-benzoylamino-, beta-acetylamino-, and beta-carbethoxy-amino-beta-phenylpropionamide by the Hoffman reaction. In addition, the N-acetyl and N-carbethoxy derivatives of 4-phenyl-2-imidazolidone were formed from beta-acetylamino- and beta-carbethoxyamino-beta-phenylpropionamide. Submitted 2 Jun 48.

PA 67/49T26

KUSEITIN, I.V.

Penetration of the adult male reproductive system of the ram  
of lamb and its consequences. Author, I.V. Kuseitin.

1. Head : Veterinary Institute of Animal Husbandry  
Anatomy Tajik State Radio, Tashkent, Tajikistan.

KUSEMBAYEV, Kh.N., gornyy inzh; USENOV, S.Ye., gornyy inzh.

Truck haulage during Sokolovka ore deposit stripping. Gor.zhur.  
no.ll: 25-27 N '48.  
(MIRA 11:11)

1. Sokolovsko-Sarbayskiy gorno-obogatitel'nyy kombinat.  
(Sokolovka(Kustanay Province)--Mine haulage)

KUSEMBAYEV, Kh.N.

Accelerated baring of the first ore horizon in the sokolovka  
strip mine. Izv. Kazakh. SSR. Ser. gor dela no.2:97-99 '58.  
(MIRA 12:10)  
(Kazakhstan--Strip mining)

AUTHORS: Kusembayev, M.M. and Usenov, S.Ye., Mining Engineers SOV/127-53-11-6/16

TITLE: Automobile Transportation During the Stripping Works at the Sokolovskoye Deposit (Avtomobil'nyy transport pri vskrytii Sokolovskogo mestorozhdeniya)

PERIODICAL: Gornyy zhurnal, 1958, Nr 11, pp 25 - 27 (USSR)

ABSTRACT: The authors describe in details the organization of the automotive transportation of the stripped overburden rock at the Sokolovskoye opencast mine. There are 2 diagrams and 2 tables.

ASSOCIATION: The Sokolovsko-Sarbayskiy gorno-obogatitel'nyy kombinat (The Sokolovskoye - Sarbay Mining and Concentration Kombinat)

Card 1/1

1. Mining engineering--USSR    2. Rock--Transportation